

# **BC95 Firmware Upgrade via UEUpdater User Guide**

**NB-IoT Module Series**

Rev. BC95\_Firmware\_Upgrade\_via\_UEUpdater\_User\_Guide\_V1.1

Date: 2017-09-18



**Our aim is to provide customers with timely and comprehensive service. For any assistance, please contact our company headquarters:**

**Quectel Wireless Solutions Co., Ltd.**

7<sup>th</sup> Floor, Hongye Building, No.1801 Hongmei Road, Xuhui District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: [info@quectel.com](mailto:info@quectel.com)

**Or our local office. For more information, please visit:**

<http://quectel.com/support/sales.htm>

**For technical support, or to report documentation errors, please visit:**

<http://quectel.com/support/technical.htm>

Or Email to: [support@quectel.com](mailto:support@quectel.com)

**GENERAL NOTES**

QUECTEL OFFERS THE INFORMATION AS A SERVICE TO ITS CUSTOMERS. THE INFORMATION PROVIDED IS BASED UPON CUSTOMERS' REQUIREMENTS. QUECTEL MAKES EVERY EFFORT TO ENSURE THE QUALITY OF THE INFORMATION IT MAKES AVAILABLE. QUECTEL DOES NOT MAKE ANY WARRANTY AS TO THE INFORMATION CONTAINED HEREIN, AND DOES NOT ACCEPT ANY LIABILITY FOR ANY INJURY, LOSS OR DAMAGE OF ANY KIND INCURRED BY USE OF OR RELIANCE UPON THE INFORMATION. ALL INFORMATION SUPPLIED HEREIN IS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

**COPYRIGHT**

THE INFORMATION CONTAINED HERE IS PROPRIETARY TECHNICAL INFORMATION OF QUECTEL WIRELESS SOLUTIONS CO., LTD. TRANSMITTING, REPRODUCTION, DISSEMINATION AND EDITING OF THIS DOCUMENT AS WELL AS UTILIZATION OF THE CONTENT ARE FORBIDDEN WITHOUT PERMISSION. OFFENDERS WILL BE HELD LIABLE FOR PAYMENT OF DAMAGES. ALL RIGHTS ARE RESERVED IN THE EVENT OF A PATENT GRANT OR REGISTRATION OF A UTILITY MODEL OR DESIGN.

***Copyright © Quectel Wireless Solutions Co., Ltd. 2017. All rights reserved.***

# About the Document

## History

Revision	Date	Author	Description
1.0	2017-08-09	Lucifer YAN	Initial
1.1	2017-09-18	Flame YANG	1. Updated UEUpdateCLI to 3.5.0.1 version. 2. Added description of firmware upgrade by UEUpdateUI.

## Contents

About the Document.....	2
Contents .....	3
Figure Index .....	4
<b>1 Introduction .....</b>	<b>5</b>
<b>2 Tool Installation.....</b>	<b>6</b>
2.1. Microsoft .NET Framework Installation .....	6
<b>3 Firmware Upgrade .....</b>	<b>8</b>
3.1. Firmware Upgrade for B657SP1 Version or Later via UEUpdaterCLI .....	8
3.1.1. Firmware Upgrade via UEUpdaterCLI_3.3.0.3 .....	8
3.1.1.1. Install UEUpdaterCLI .....	8
3.1.1.2. Erase Flash .....	10
3.1.1.3. Upgrade Firmware.....	11
3.1.2. Firmware Upgrade via UEUpdaterCLI_3.5.0.1 .....	14
3.2. Firmware Upgrade for B657SP2 Version or Later via UEUpdaterUI .....	14
3.2.1. Install UEUpdaterUI .....	14
3.2.2. Upgrade Firmware UEUpdaterUI .....	16

## Figure Index

FIGURE 1: MICROSOFT .NET FRAMEWORK INSTALLATION PACKAGE .....	6
FIGURE 2: LICENSE AGREEMENT FOR MICROSOFT .NET FRAMEWORK INSTALLATION .....	6
FIGURE 3: MICROSOFT .NET FRAMEWORK IS INSTALLING .....	7
FIGURE 4: MICROSOFT .NET FRAMEWORK IS SUCCESSFULLY INSTALLED .....	7
FIGURE 5: UEUPDATERCLI INSTALLATION PACKAGE .....	8
FIGURE 6: UEUPDATERCLI SETUP WIZARD .....	8
FIGURE 7: WAIT WHILE INSTALLING UEUPDATERCLI .....	9
FIGURE 8: UEUPDATERCLI IS SUCCESSFULLY INSTALLED .....	9
FIGURE 9: UEUPDATERCLI INTERFACE .....	10
FIGURE 10: SET PORT AND ERASE FLASH .....	10
FIGURE 11: FLASH IS COMPLETELY ERASED .....	11
FIGURE 12: INFORMATION OF UPGRADE PACKAGE .....	11
FIGURE 13: INFORMATION OF LOCAL PATH .....	11
FIGURE 14: UPGRADE FIRMWARE .....	12
FIGURE 15: PROMPT FOR RESETTNG OR RESTARTING THE MODULE .....	12
FIGURE 16: UPGRADING PROCESS .....	13
FIGURE 17: FIRMWARE IS COMPLETELY UPGRADED .....	13
FIGURE 18: UEUPDATER_3.5.0.1 INSTALLATION PACKAGE .....	14
FIGURE 19: UEUPDATERUI INSTALLATION PACKAGE .....	14
FIGURE 20: UEUPDATERUI SETUP WIZARD .....	15
FIGURE 21: WAIT WHILE INSTALLING UEUPDATERUI .....	15
FIGURE 22: UEUPDATERCLI IS SUCCESSFULLY INSTALLED .....	16
FIGURE 23: UEUPDATERUI INTERFACE .....	16
FIGURE 24: SELECT MAIN PORT TO UPGRADE .....	17
FIGURE 25: CLICK BROWSE TO SELECT THE FIRMWARE VERSION PACKAGE .....	17
FIGURE 26: SELECT THE TARGET FIRMWARE VERSION .....	18
FIGURE 27: CHECK "WRITE CONFIG" AND "NO BAUD SWITCH" .....	18
FIGURE 28: PROMPT FOR UPDATING .....	19
FIGURE 29: UPGRADING PROCESS .....	19
FIGURE 30: FIRMWARE IS COMPLETELY UPGRADED .....	20

# 1 Introduction

This document mainly introduces how to use UEUpdater tool to upgrade firmware via main UART port for Quectel BC95 module with V100R100C10B657SP1 version or later on Window 7 system.

Currently, UEUpdater tool includes two versions: UEUpdaterCLI\_3.3.0.3 and UEUpdaterCLI\_3.5.0.1. UEUpdaterCLI\_3.3.0.3 can only be used to upgrade firmware for B657SP1 version and it only supports to upgrade firmware via UEUpdaterCLI. And on UEUpdaterCLI\_3.5.0.1, firmware can be upgraded via UEUpdaterCLI or UEUpdaterUI.

Quectel  
Confidential

## 2 Tool Installation

Customers need to install “Microsoft .NET Framework” (4.5.2 version or later) on PC before using UEUpdater.

### 2.1. Microsoft .NET Framework Installation

1. Double-click *microsoft.net framework 4.5.2.exe* to install Microsoft .NET Framework.

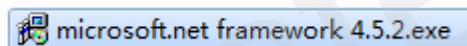


Figure 1: Microsoft .NET Framework Installation Package

2. Wait until the following window shows up, and then click “**I have read and accept the license terms**” and “**Install**” as shown below.

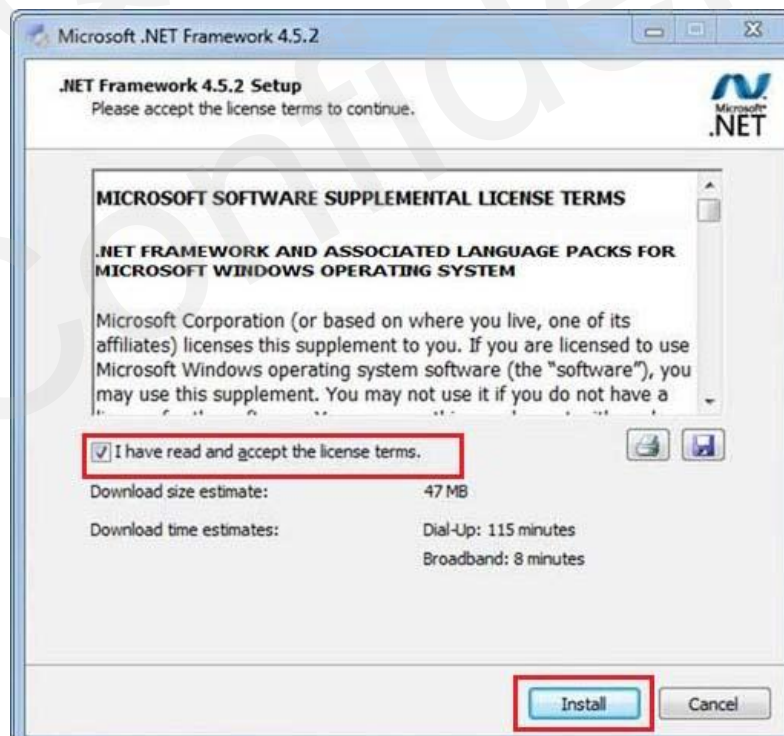


Figure 2: License Agreement for Microsoft .NET Framework Installation

- Please wait for the program to install.

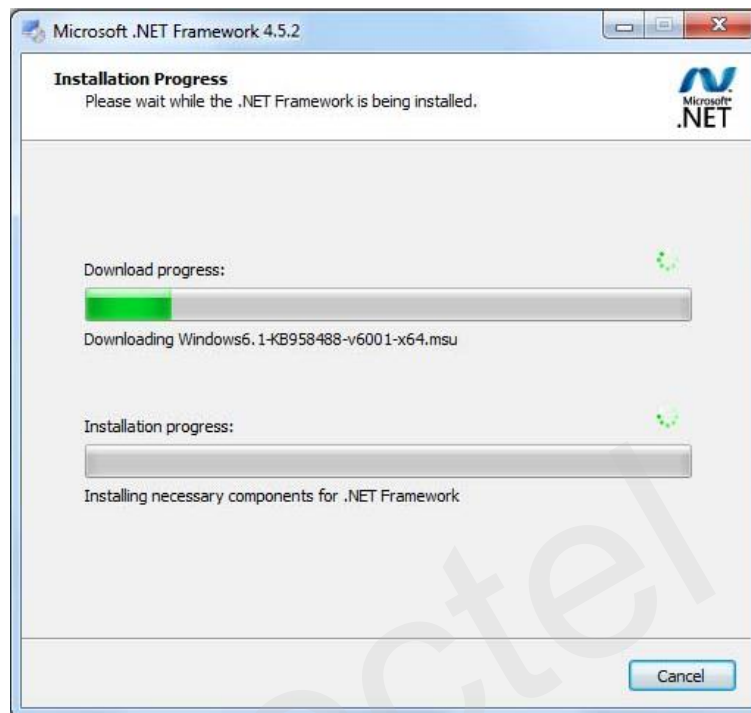


Figure 3: Microsoft .NET Framework is Installing

- Click “**Finish**” to accomplish installation.

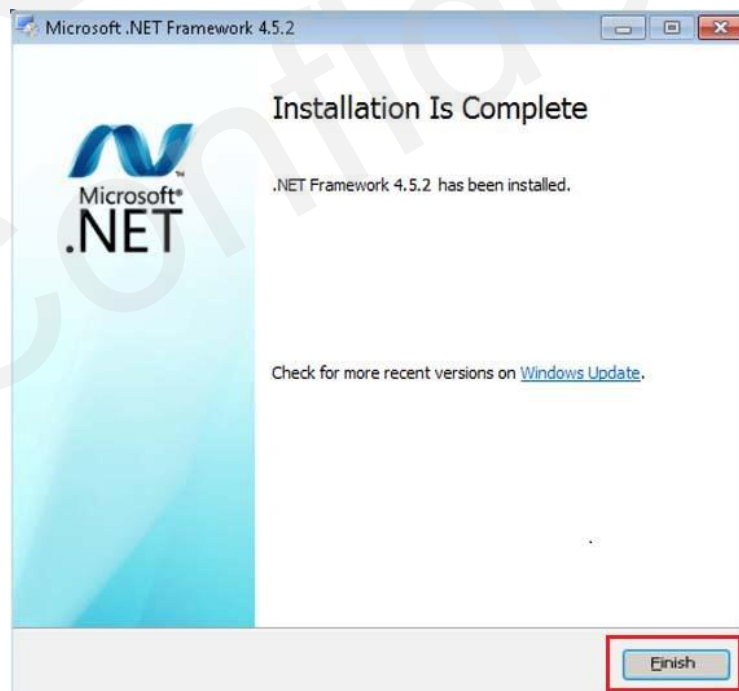


Figure 4: Microsoft .NET Framework is Successfully Installed



## 3 Firmware Upgrade

### 3.1. Firmware Upgrade for B657SP1 Version or Later via UEUpdaterCLI

#### 3.1.1. Firmware Upgrade via UEUpdaterCLI\_3.3.0.3

##### 3.1.1.1. Install UEUpdaterCLI

1. Unzip *UEUpdater\_3.3.0.3.zip* and double-click *UEUpdaterCLI-3.3.0.3.msi* to install UEUpdaterCLI.

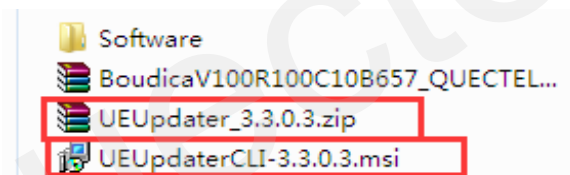


Figure 5: UEUpdaterCLI Installation Package

2. Wait until the following window shows up, and then click “**Next**”.

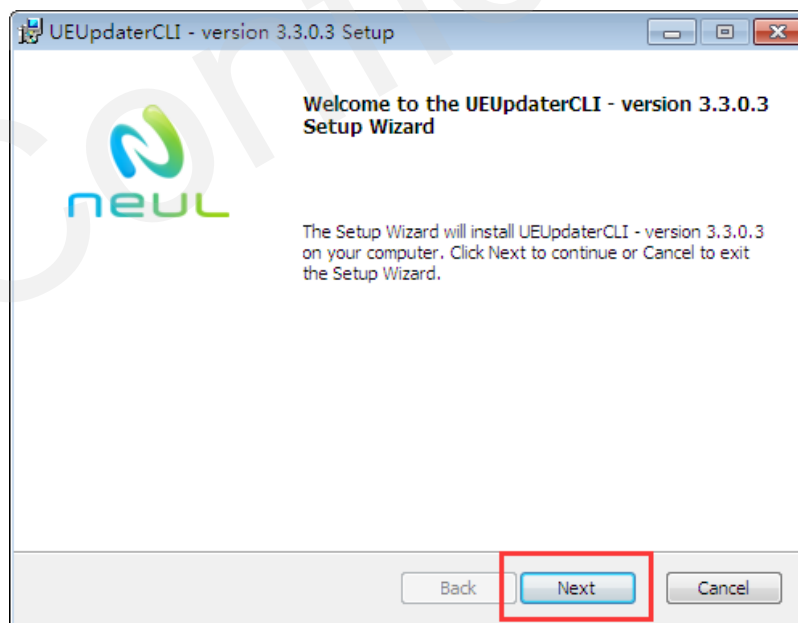


Figure 6: UEUpdaterCLI Setup Wizard

3. Please wait for the program to install.

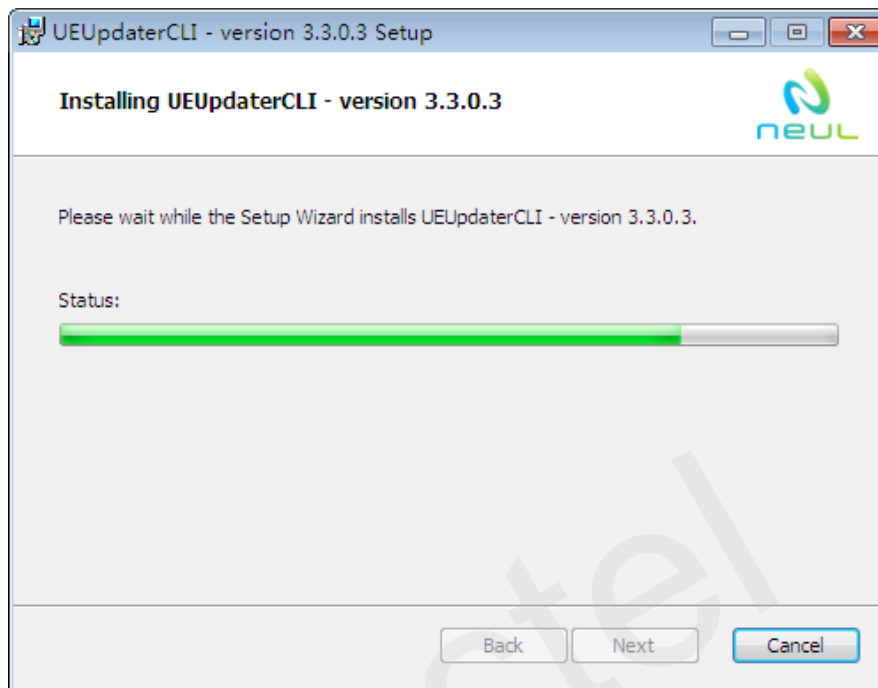


Figure 7: Wait While Installing UEUpdaterCLI

4. Click "Finish" to accomplish installation.

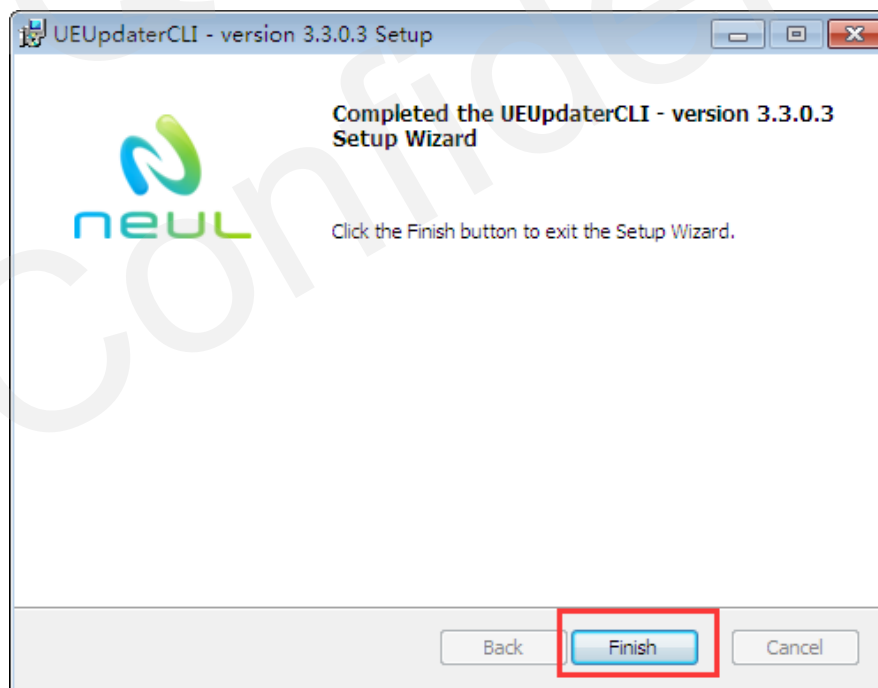


Figure 8: UEUpdaterCLI is Successfully Installed

- Click “**Start**” button on desktop of PC, and find “UEUpdaterCLI” to open the tool, the command-line interface will be shown as below.

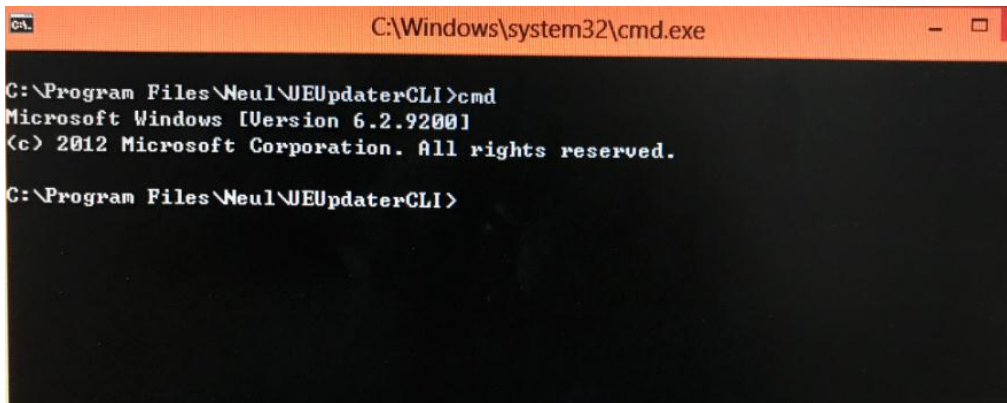


Figure 9: UEUpdaterCLI Interface

### 3.1.1.2. Erase Flash

The original NV (non-volatile) items such as IMEI number will not be preserved after erasing the flash, please read out the IMEI number by **AT+CGSN=1** command before erasing operation.

- Open UEUpdaterCLI interface, and enter command **ueupdater.exe erase --port com12 --noBaudSwitch --passive** to set port and erase flash. Please note that port should be set accordingly.

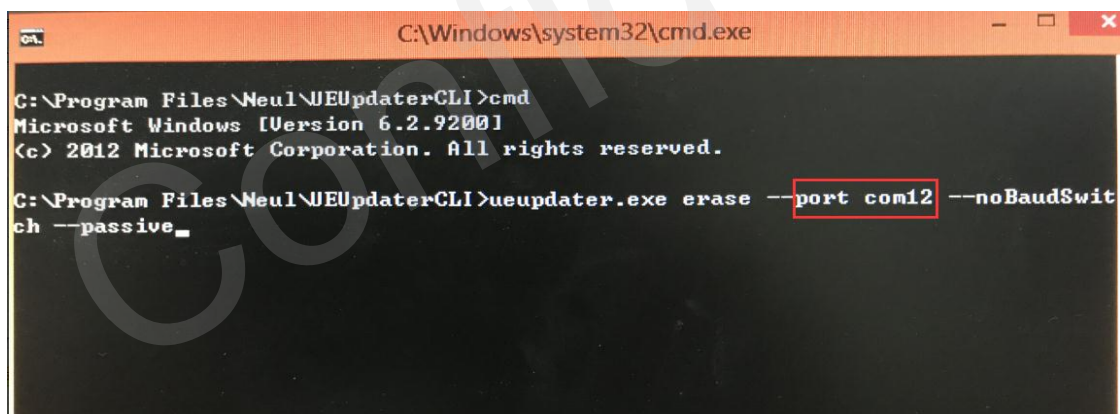


Figure 10: Set Port and Erase Flash

- After the execution of the command above has been completed, press “**Enter**” key to continue. When “**Waiting for bootloader to send info message...**” shows up, press “**Reset**” button on the module, or power off the module and then power on to restart the module, and wait for erasing. If “**try resetting again...**” pops up, please re-press “**Reset**” button on the module, or power off the module and then

power on to restart the module again. When “**Application finished**” shows up, it means the flash has been completely erased.

```
C:\Program Files\Neul\UEUpdaterCLI>ueupdater.exe erase --port com12 --noBaudSwitch --passive
UEUpdater v3.3.0.3
Waiting for bootloader to send info message...
Initial bootInfo
Verifying connection...
Unable to verify bootloader connection - try resetting again...
Initial bootInfo
Secondary bootInfo/ack
Verifying connection...
Connected to bootloader
2017-07-25 15:07:53,867 INFO : Comms established to H2110Boudica, bootloader stage SsbRom protocol version 0
Performing full chip erase...

Sorry - something went wrong - No response from bootloader. Please reset the UE and try again.

Application finished.
```

Figure 11: Flash is Completely Erased

### 3.1.1.3. Upgrade Firmware

The firmware can be upgraded after erasing the flash.

1. Open the upgrade package and record the local path.

Name	Date modified	Type	Size
Software	8/9/2017 2:02 PM	File folder	
BoudicaV100R100C10B657_QUECTEL.zip	8/9/2017 2:02 PM	WinRAR ZIP .....	4,221 KB
UEUpdater_3.3.0.3.zip	7/10/2017 10:00 PM	WinRAR ZIP .....	5,533 KB
UEUpdaterCLI-3.3.0.3.msi	7/3/2017 4:51 PM	Windows Installer ...	3,512 KB
UEUpdaterUI-3.3.0.3.msi	7/3/2017 4:51 PM	Windows Installer ...	3,636 KB

Figure 12: Information of Upgrade Package

Name	Date modified	Type	Size
module	8/9/2017 3:06 PM	File folder	
BC95HA-02-STD_800.fwpkg	7/5/2017 7:54 PM	FWPKG File	957 KB
BC95HA-02-STD_850.fwpkg	7/5/2017 7:54 PM	FWPKG File	957 KB
BC95HA-02-STD_900.fwpkg	7/5/2017 7:54 PM	FWPKG File	957 KB
BC95HB-02-STD_800.fwpkg	7/5/2017 7:54 PM	FWPKG File	957 KB
BC95HB-02-STD_850.fwpkg	7/5/2017 7:54 PM	FWPKG File	957 KB
BC95HB-02-STD_900.fwpkg	7/5/2017 7:54 PM	FWPKG File	957 KB

Figure 13: Information of Local Path

2. In the UEUpdaterCLI interface, enter the upgrade command: `ueupdater.exe updateall --in F:\shengji\657\Software\NB-IOT-B657_QUECTEL\quectel\BC95HB-02-STD_900.fwpkg --port com12 --noBaudSwitch --passive`, in which the local path, .fwpkg file name, and port should be set accordingly. After the execution of the command has been finished, press “Enter” key to upgrade.

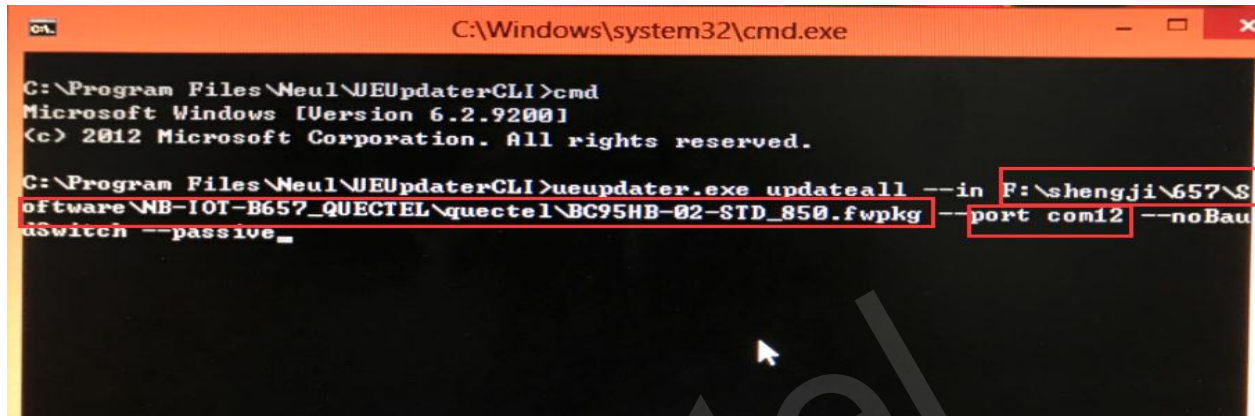


Figure 14: Upgrade Firmware

**NOTE**

The “BC95HB-02-STD\_900.fwpkg” in the command is the filename of the version package. “HB” indicates the hardware version, 800 corresponds to Band 20, 850 corresponds to Band 5, 900 corresponds to Band 8. Please select corresponding file according to the ordering code on the module.

3. When “Waiting for bootloader to send info message...” shows up, press “Reset” button on the module, or power off the module and then power on to restart the module.

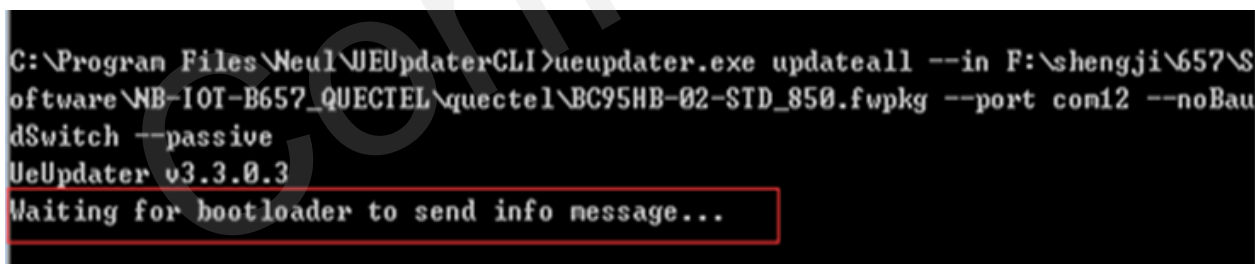


Figure 15: Prompt for Resetting or Restarting the Module



- After restarting the module, it starts upgrading the firmware, please wait during the process.

```
Secondary bootInfo/ack
Verifying connection...
Setting flash limits
Validating checksum for Security core...
Checksum matches
Security core already loaded
Entering Flash Bootloader
Initial bootInfo
Verifying connection...
Resetting flash limits
Validating checksum for Protocol core...
Checksum matches
Protocol core already loaded
Validating checksum for Application core...
Checksum matches
Application core already loaded
Validating checksum for SecurityUpdater core...
Checksum matches
SecurityUpdater core already loaded
Validating checksum for ApplicationUpdater core...
Checksum matches
ApplicationUpdater core already loaded
Programming frontend configuration
Bootloader version 29, minimum required version is 13
0% Setting front-end configuration
```

Figure 16: Upgrading Process

- When “**Application finished**” shows up, it indicates the firmware is upgraded completely.

```
Programming frontend configuration
Bootloader version 29, minimum required version is 13
100% Setting front-end configuration
Programming general configuration
100% Setting general configuration
Update complete.

Application finished.

C:\Program Files\Neul\UEUpdaterCLI>
```

Figure 17: Firmware is Completely Upgraded

- Restart the module, and query the firmware version by AT command **AT+CGMR**. If the target version is returned, then the firmware is successfully upgraded.
- Write the IMEI number which has been read out before erasing flash to the module by **AT+NTSETID=1,.....** and query the IMEI number by **AT+CGSN=1**.

### 3.1.2. Firmware Upgrade via UEUpdaterCLI\_3.5.0.1

The procedures of using UEUpdaterCLI\_3.5.0.1 to upgrade firmware are identical to that of UEUpdaterCLI\_3.3.0.3, except that the tool package is different. The following show the installation package of UEUpdaterCLI\_3.5.0.1.

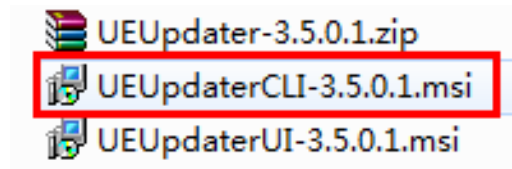


Figure 18: UEUpdater\_3.5.0.1 Installation Package

#### NOTE

Please note that UEUpdaterCLI\_3.3.0.3 can only be used to upgrade firmware for B657SP1 version, and it does not support to upgrade firmware via UEUpdaterUI.

## 3.2. Firmware Upgrade for B657SP2 Version or Later via UEUpdaterUI

### 3.2.1. Install UEUpdaterUI

1. Unzip *UEUpdater\_3.5.0.1.zip* and double-click *UEUpdaterUI-3.5.0.1.msi* to install UEUpdaterUI.

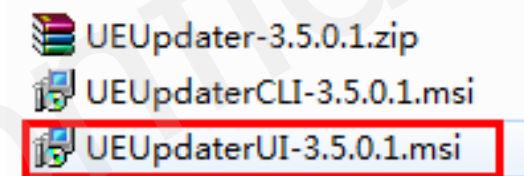


Figure 19: UEUpdaterUI Installation Package

2. Wait until the following window shows up, and then click **“Next”**.

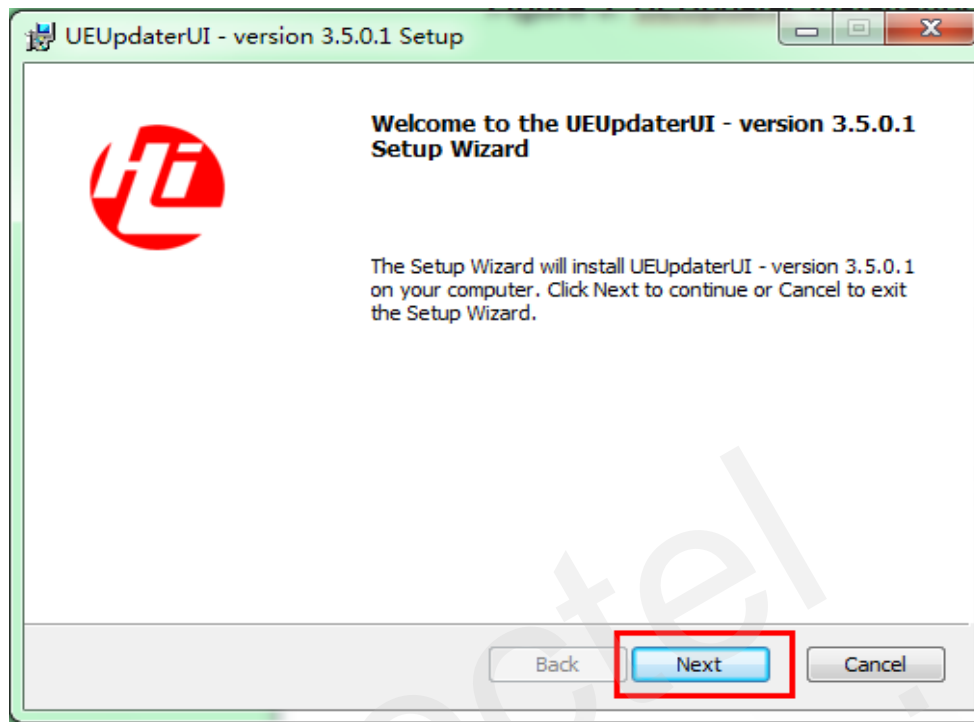


Figure 20: UEUpdaterUI Setup Wizard

3. Please wait for the program to install.

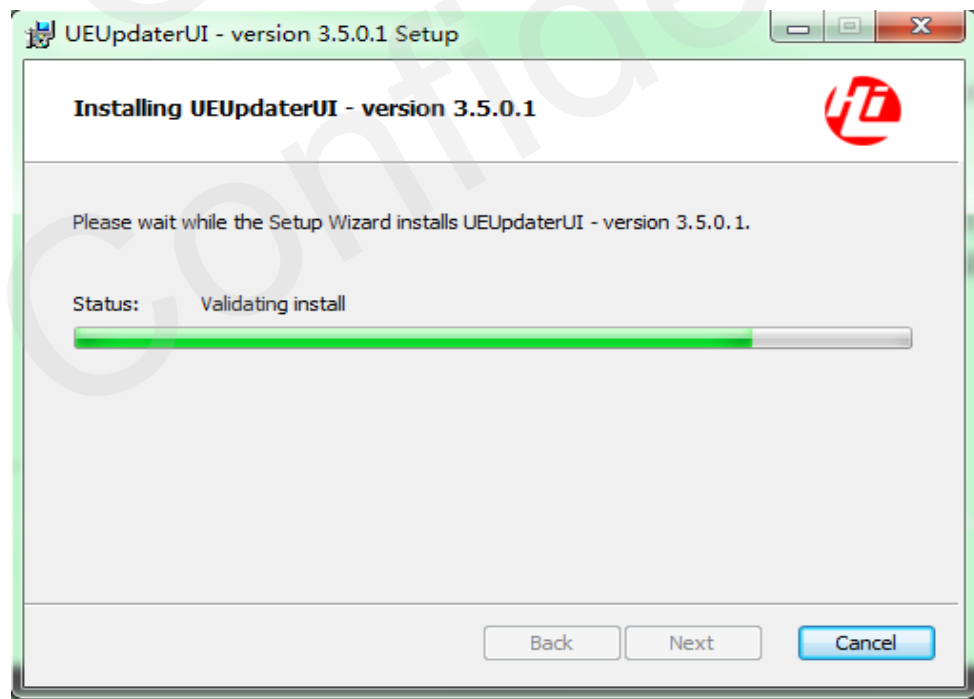


Figure 21: Wait While Installing UEUpdaterUI



- Click **“Finish”** to accomplish installation. A shortcut will be automatically generated on the desktop.

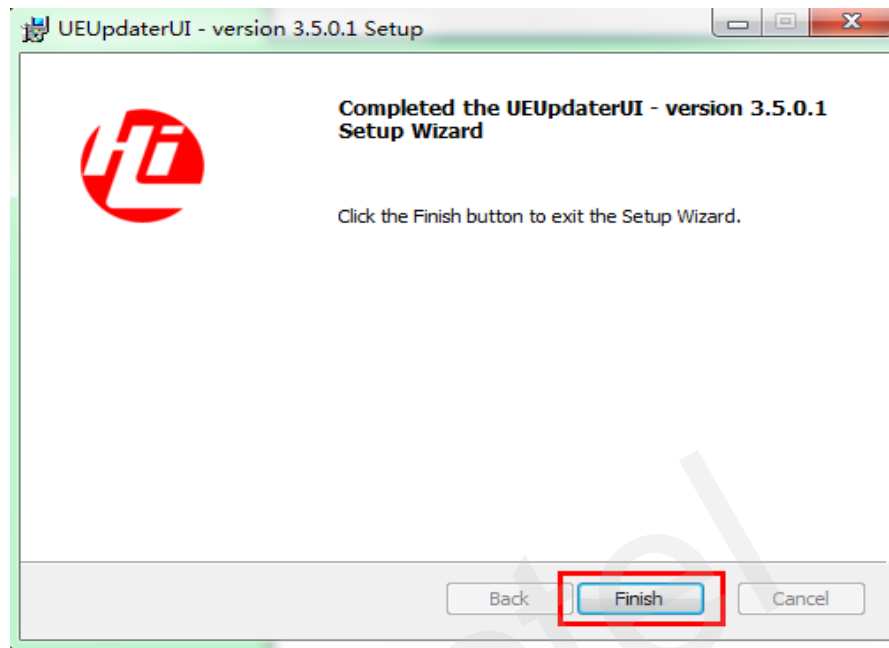


Figure 22: UEUpdaterCLI is Successfully Installed

### 3.2.2. Upgrade Firmware UEUpdaterUI

- Double-click the desktop shortcut generated when installing UEUpdaterUI to open the UEUpdaterUI.

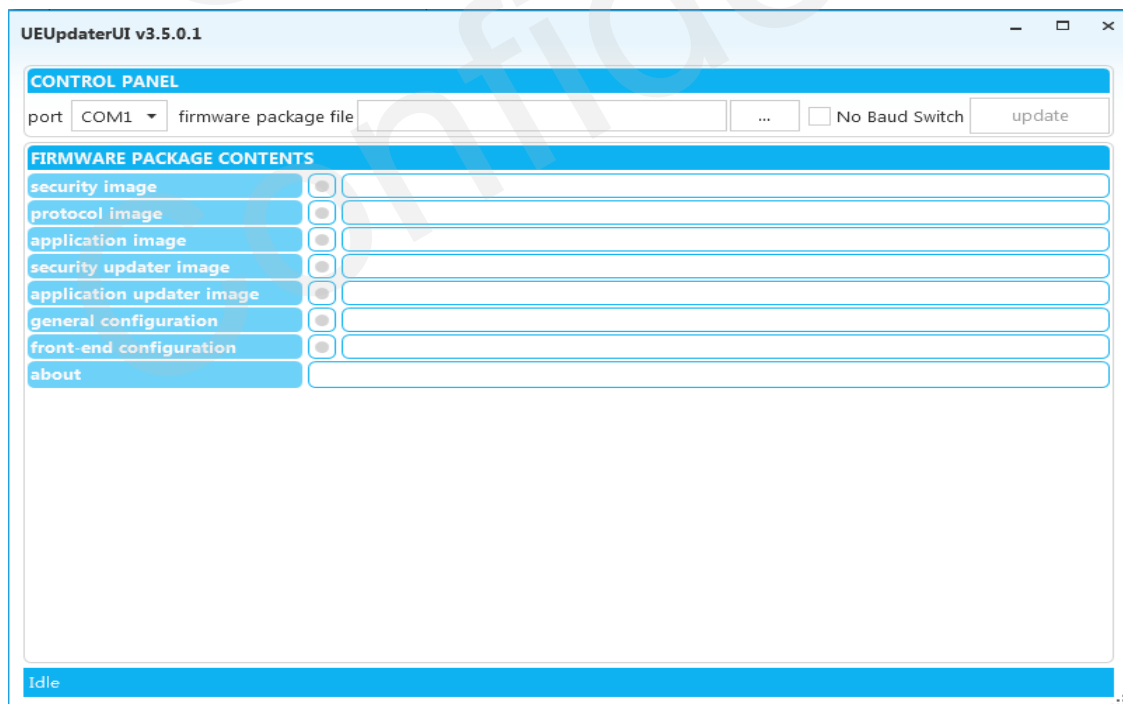


Figure 23: UEUpdaterUI Interface

2. Select the main serial port to upgrade the firmware version.

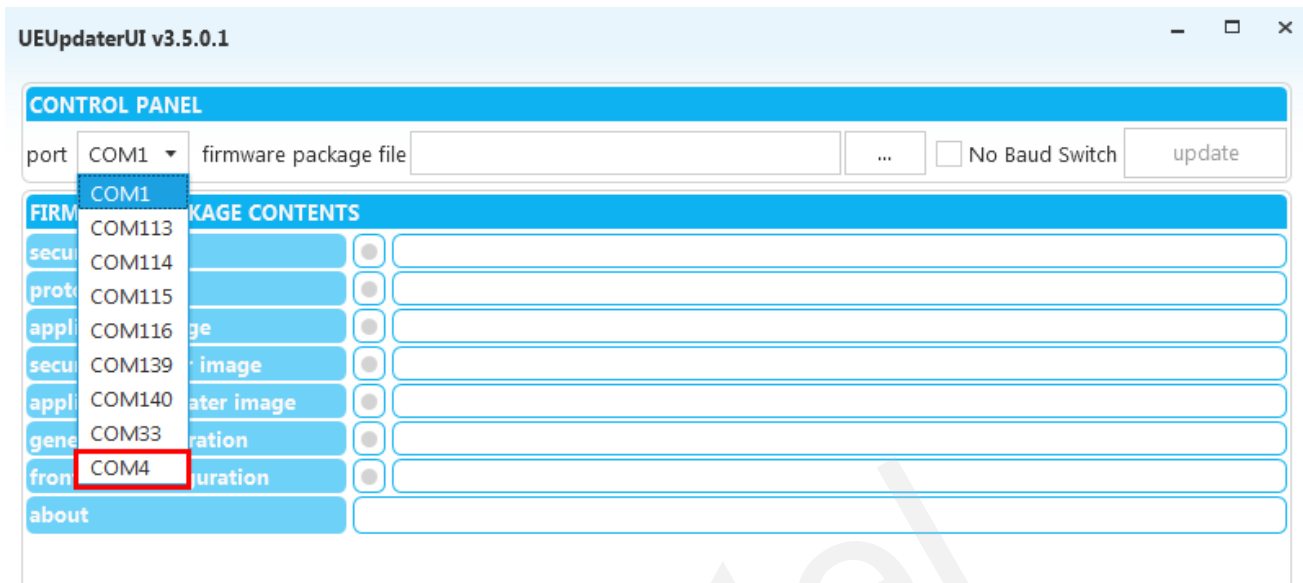


Figure 24: Select Main Port to Upgrade

3. Click the “**browse**” button to select the firmware version package.

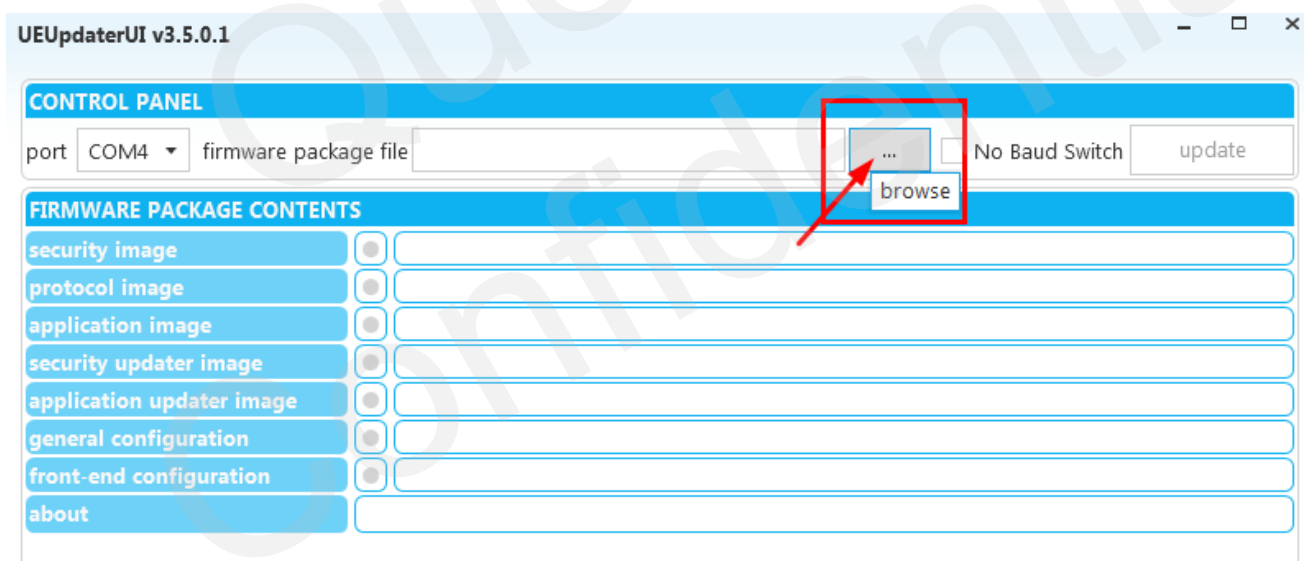


Figure 25: Click Browse to Select the Firmware Version Package

- Select the target firmware version of the **.fwpkg** file, then check **“write config”** and **“No Baud Switch”**.

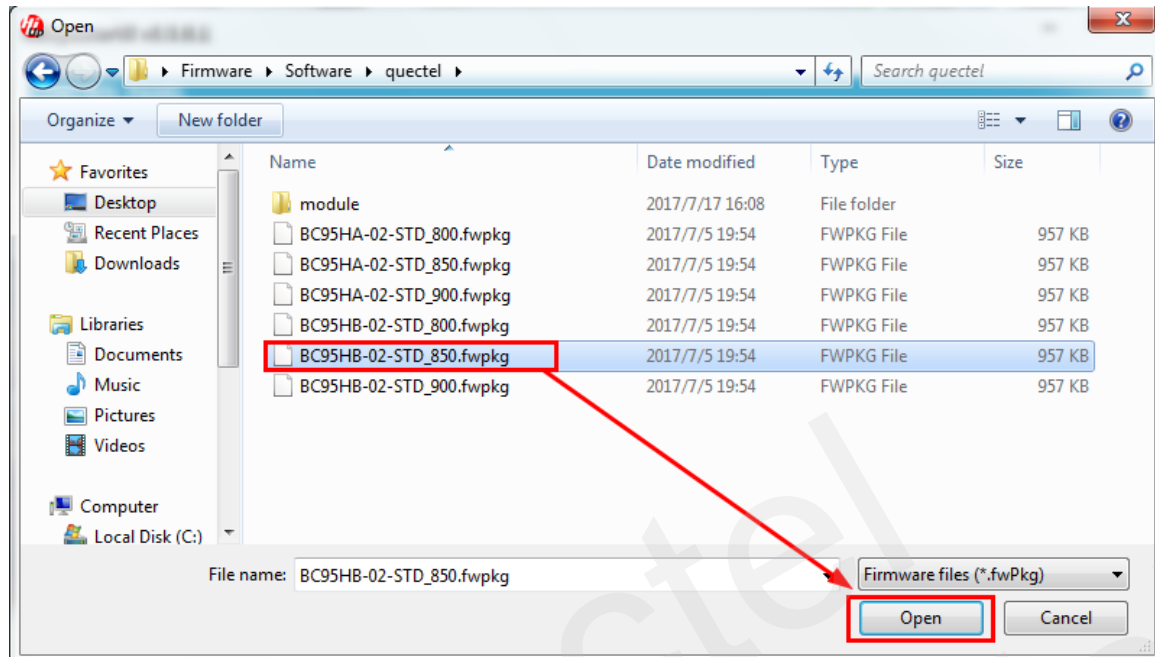


Figure 26: Select the Target Firmware Version

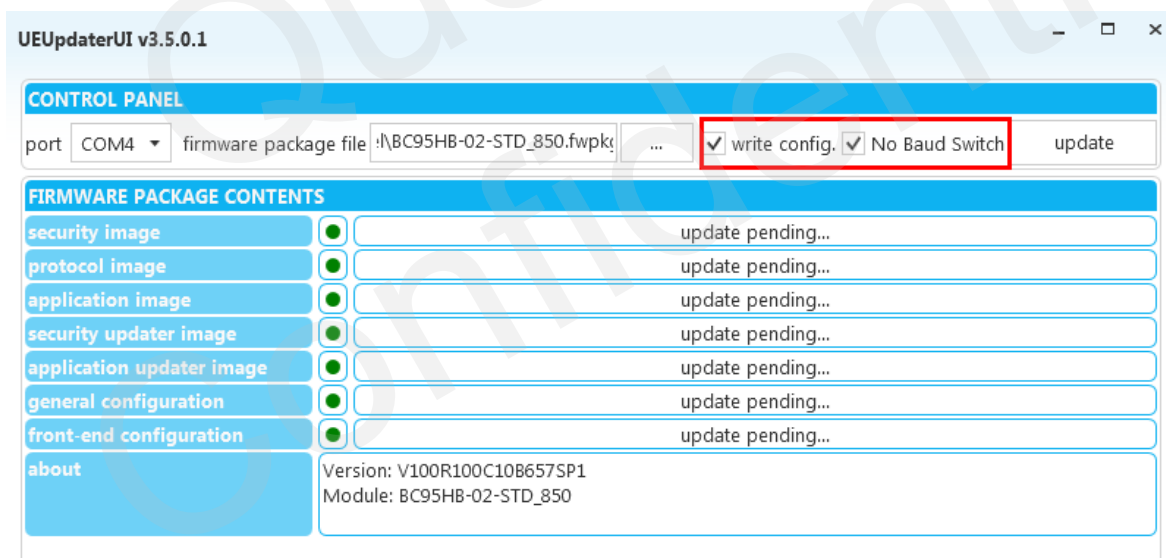


Figure 27: Check “write config” and “No Baud Switch”

**NOTE**

The **“BC95HB-02-STD\_850.fwpkg”** in the selection list is the filename of the version package. “HB” indicates the hardware version, 800 corresponds to Band 20, 850 corresponds to Band 5, 900 corresponds to Band 8. Please select corresponding file according to the ordering code on the module.

- Click the **"update"** button to start upgrading. When **"updating"** shows up, press **"Reset"** button on the module, or power off the module and then power on to restart the module.

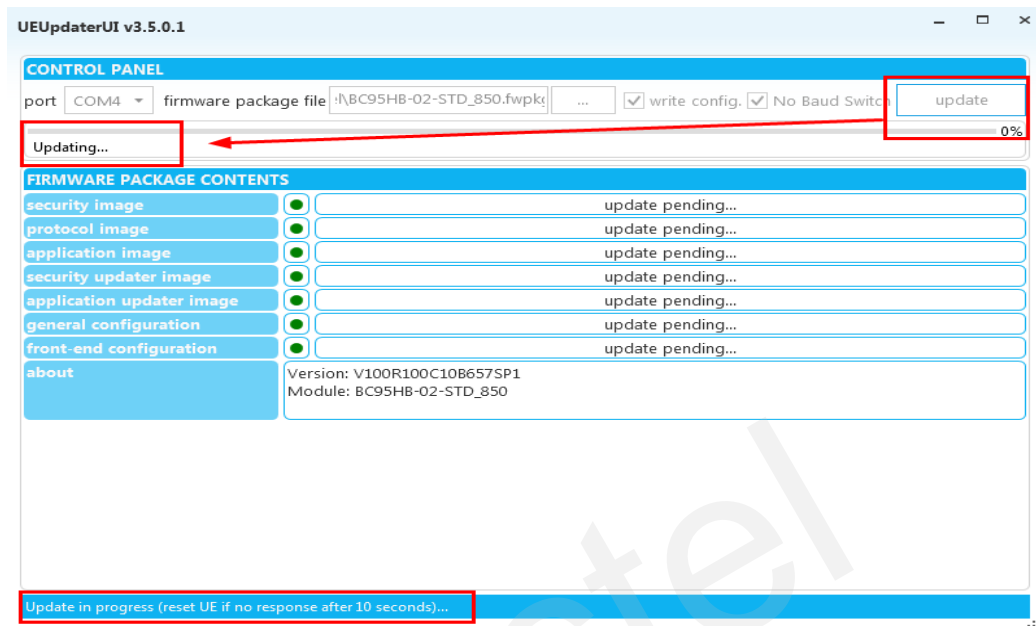


Figure 28: Prompt for Updating

**NOTE**

Please reset the module within 10 seconds, otherwise UEUpdateUI will be disconnected with the main port.

- After restarting the module, it starts upgrading the firmware, please wait during the process.

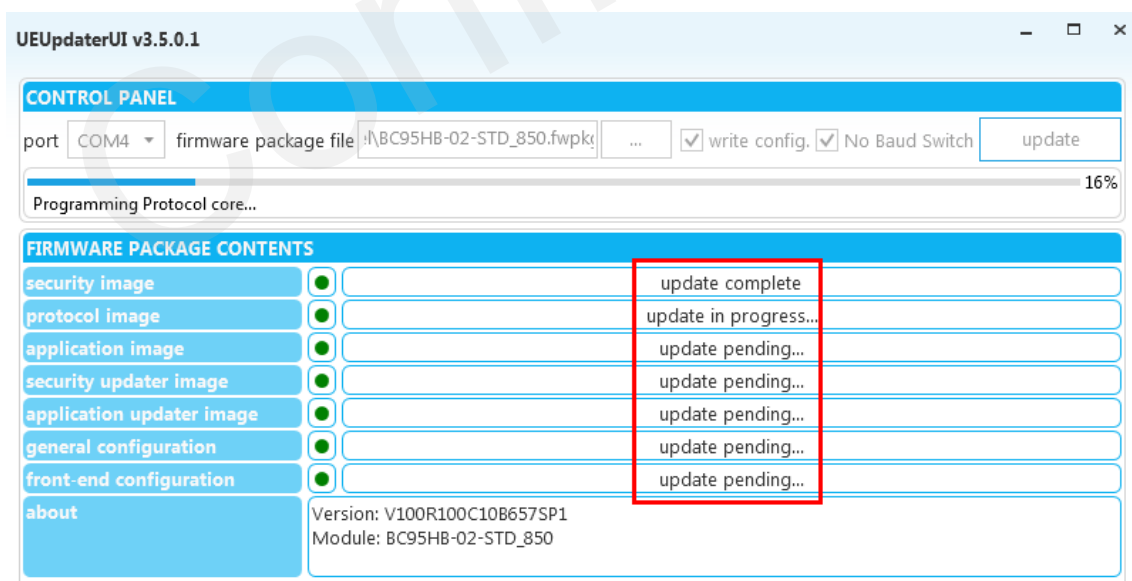
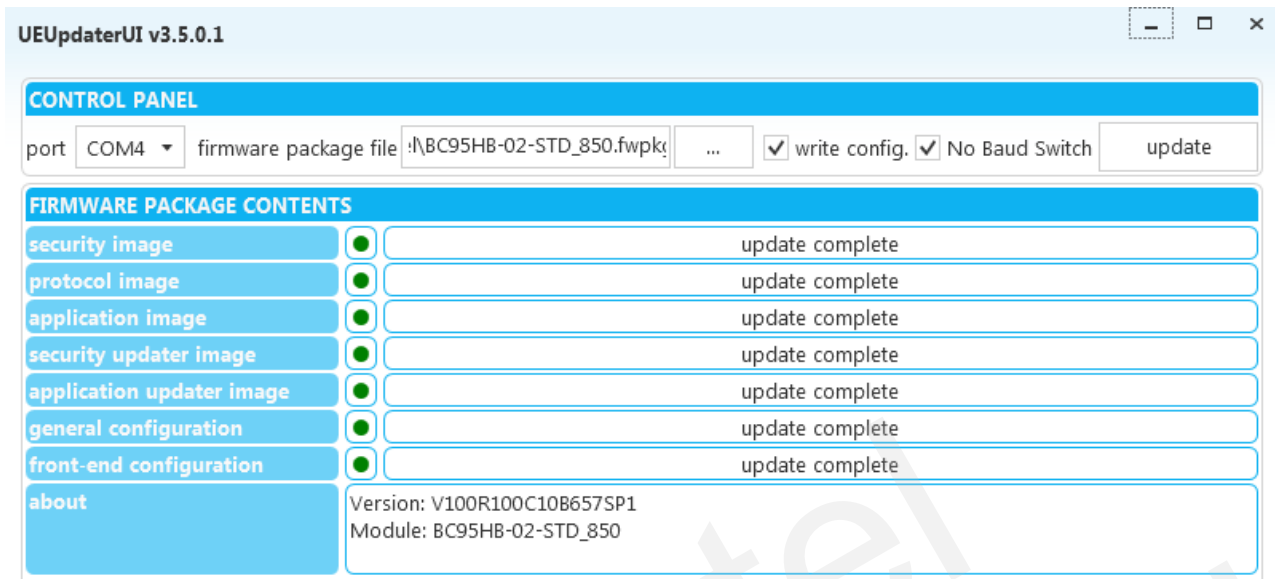


Figure 29: Upgrading Process

- When all “**update pending...**” status changes to “**update complete**”, it indicates the firmware is upgraded completely.



**Figure 30: Firmware is Completely Upgraded**

- Restart the module, and query the firmware version by AT command **AT+CGMR**. If the target version is returned, then the firmware is successfully upgraded.

#### NOTE

UEUpdateUI will not erase the flash, so it will retain the module's IMEI number and CDP server IP. If customers want to erase the flash, please refer to **Chapter 3.1.1.2**, then follow the procedures above to upgrade the firmware. In this case, customers need to write IMEI number to the module by **AT+NTSETID=1,.....** and query the IMEI number by **AT+CGSN=1**.